

IN THE SPECIFICATION

Please replace the third paragraph on page 2, commencing on line 18, with the following amended paragraph:

Illustratively, “loyal” customers, e.g., customers with frequent or repeated significant orders, bidders with better bidder ranking criteria, e.g., higher eBay® ratings, and customers with identifiably more elastic demands, etc., may be treated preferentially by awarding them a price discount. Similarly, mortgage customers or other borrowers with excellent credit ratings may be awarded a lower interest rate. Conversely, new, e.g., unknown customers, inflexibly rigid customers with stringent accommodation demands, or borrowers with lower credit ratings may represent to a business a higher cost or degree of risk in dealing with them. Such riskier or costlier customers may be discriminated against with higher interest rates, requiring premium prices, or in other handicapping ways.

Please replace the second paragraph on page 3, commencing on line 15, with the following amended paragraph:

Currently, the decisions on the parameters of preference policy are left entirely to the person conducting the auction. There is little systemic data analysis to guide these decisions. Given the multiplicity of items bought/sold through auctions, it is typically too costly to hire expert analysis to configure the price-preference policies for each case. Typically, a given policy, say 10% preference for preferred suppliers, is applied to a large class of procurement situations. Yet bidders’ cost distributions vary considerably across procurement items and across time. A fixed preference policy is rarely optimal for every case to which it is applied.

Please replace the last paragraph on page 4, commencing on line 5, with the following amended paragraph:

There exists a need for an automated estimation and optimization solution for configuring the parameters of preference policies to be implemented in auctions. What is needed is a method and/or system that configures the optimal preference policies that can be combined with any auction format a market decision maker may wish to conduct. What is also needed is a method and/or system that applies to any auction participants, either buyers conducting an auction to procure an item, or a seller, conducting to sell an item, which estimate's bidders private information and correspondingly identifies exploitable asymmetries. Further, what is needed is a method and/or system that achieves the foregoing to implement a preferential treatment policy.

In the BRIEF DESCRIPTION OF THE DRAWINGS:

Please replace the second paragraph on page 7, commencing on line 6, with the following:

Figure 1 schematically shows an automated decision support system for designing auctions in accordance with an embodiment of the invention.

Please replace the fifth paragraph, commencing on line 16 of page 7, and continuing to the fourth paragraph of page 8, ending on line 12, inclusive, with the following:

Figure 4 is a flow chart of steps in a process for generating auction characteristics data, in accordance with an embodiment of the present invention.

Figure 5 is a flow chart of steps in a process for generating a relevant bidding model, in accordance with an embodiment of the present invention.

Figure 6 is a flow chart of steps in a process for generating an estimated market structure, in accordance with an embodiment of the present invention.

Figure 7 is a flow chart of steps in a process for predicting bidder behavior, in accordance with an embodiment of the present invention.

Figure 8 is a flow chart of steps in a process for determining an optimal preference policy, in accordance with an embodiment of the present invention.

Figure 9 is a flow chart of steps in a process for reporting preference policy ranking, in accordance with an embodiment of the present invention.

Figure 10 is a block diagram depicting a computer system and computer readable media for implementing processes of market preference policy determination, in accordance with an embodiment of the present invention.

Figure 11 (sheets 1-4) depicts contents of a database of market data, in accordance with an embodiment of the present invention.

Figure 12 is a flow chart of steps in a process for determining an optimal reserve price for an auction, in accordance with an embodiment of the present invention.

Please replace the paragraph beginning on page 12, line 6, with the following paragraph:

In order to achieve the maximum revenue or profit, these decisions must be optimized. In accordance with an embodiment of the present invention, this optimization is done by automatic decision support system 10. Automatic decision support system 10 provides optimal configuration of auction design parameters and comparative evaluation of any pair of design choices. In other words, automatic decision support system 10 provides automated auction analysis optimization.

Please replace the second paragraph, commencing on line 14, with the following paragraph:

In accordance with an embodiment of the present invention, automatic decision support system 10 processes available data using structural econometric techniques to identify latent distribution of random or unknown elements of a market structure or market environment of a particular auction. In addition, automatic decision support system 10 provides the optimal values of any subset of the decision variables or candidates based on an evaluation criterion specified by a user of system 10 conditional on levels of the remaining decisions.

Please replace the last paragraph on page 13, commencing on line 22, and which ends on page 14, line 5, with the following paragraph:

In accordance with an embodiment of the present invention, automatic decision support system 10 estimates the unknown or unobservable elements of the market structure of the auction by extracting the joint distribution of private information of the bidders (e.g., the probability distribution of bidders' willingness to pay, the probability distribution of the number of potential bidders) from bid data extracted from the historical auction data of similar auctions. In particular, automatic decision support system 10 estimates the unknown elements of the market structure by (1) expressing unobservable variables in the bidding model in terms of the observable bid data, and (2) applying known statistical density estimation techniques to the expression so as to obtain an estimation of the unknown elements. In doing so, automatic decision support system 10 enables the user (either a seller or a buyer) of system 10 to factor the distribution of bidders' private information into his or her decisions regarding the appropriate auction procedure to conduct the auction.

Please replace the last paragraph on page 14, commencing on line 16 and which continues to line 2 on page 15, with the following paragraph:

As can be seen from Figure 1, automatic decision support system 10 includes a historical auction data repository 11, a bidding model repository 12, a structure extractor 13, a behavior predictor 14, and an optimizer 15. The historical auction data repository 11 stores historical auction data for previous auctions. The historical auction data specify auction characteristics and/or mechanisms of previous auctions. This means that the historical auction data includes the bid data and the auction characteristics data of each of the stored previous auctions. The auction characteristics data specify the auction procedure of the auction. Thus, the auction characteristics data of an auction describe the reserve price of the auctioned item, the auction format, the number of bidders, etc. of the particular auction. The bid data of an auction describe the bidding

behaviors of bidders in the auction. The bid data is a record that typically contains the auction identifier, number of bidders N, number of bids, transaction price, winner, reserve price, auction format, item characteristics, and bidder characteristics. Both the bid data and the auction characteristics data are extracted from the auction data of the previous or historical auctions for various items. The historical auction data repository 11 can be implemented using any known database technology.

Please replace the first paragraph on page 17, line 2, with the following paragraph:

The first functionally active component of automated decision support system (Fig. 1) of an embodiment of the present invention, structure extractor 13 effectuates the estimation of the distributions of private signals of bidders from bid data in prior auctions allows for possible asymmetries across identifiable bidder groups to be recognized.

Please replace the third paragraph on page 17, commencing on line 18, with the following paragraph:

An end-user inputs a specific performance criterion to be optimized by possibly combining these elements. The end-user is also allowed to specify a collection of constraints. The end-user inputs the constraints on the auction mechanisms to be evaluated. Examples of such constraints include, but are not limited to, the following two. First, the end-user may restrict the auction format to a sealed-bid first-price format and may wish to choose the personalized reserve prices for different bidder groups optimally. Second, the end-user may wish to use an English auction combined with a linear bid comparison rule to treat a group of bidders favorably; the parameters of the linear rule are to be selected to optimize the stated objective function.